IN THE CLAIMS:

Please amend the claims as follows:

1-37. (Canceled)

~~34~~. 38. (Currently Amended) A printhead for jetting a hot liquid medium, comprising:

a diaphragm that forms a wall of a medium chamber;

an actuator in mechanical contact with the diaphragm comprising a piezoelement, the piezoelement being thermally decoupled from the diaphragm by a thermal barrier element;

the thermal barrier element being an integral part of the piezoelement with the piezoelement having an active region and a passive region, the passive region forming the thermal barrier element; and

the active region and the passive region having electrodes, the electrodes at a transition zone between active and passive zones being interrupted.

~~35~~. 39. (Currently Amended) The printhead of claim ~~34~~ 38, wherein a cross-section in a zone of the thermal barrier element is smaller than in a remaining area of the actuator.

~~36~~. 40. (Currently Amended) The printhead of claim ~~34~~ 38, wherein other walls of the medium chamber are formed by a substrate comprised of silicon.

~~37~~. 41. (Currently Amended) The printhead of claim ~~34~~ 38, wherein the actuator is surrounded by a first housing.

~~38~~. 42. (Currently Amended) The printhead of claim ~~37~~ 41, wherein the actuator is configured as lamella and extends between the diaphragm and a wall of the first housing which forms a support for the actuator.

~~39~~. 43. (Currently Amended) The printhead of claim ~~37~~ 41, wherein the first housing is configured to be at least one of electrically insulating and poor heat conducting.

~~40~~. 44. (Currently Amended) The printhead of claim ~~37~~ 41, wherein the first housing is formed from a material that has a heat expansion coefficient that is at least similar to the heat expansion coefficient of the material forming the actuator.

~~41~~. 45. (Currently Amended) The printhead of claim ~~34~~ 38, wherein the diaphragm of the medium chamber forms a housing wall.

~~42~~. 46. (Currently Amended) The printhead of claim ~~37~~ 41, wherein the first housing is thermally decoupled from the medium chamber.

~~43~~. 47. (Currently Amended) The printhead of claim ~~37~~. 41, wherein the first housing has thermal expansion compensation.

~~44~~. 48. (Currently Amended) The printhead of claim ~~34~~ 38, further comprising at least

one of a heating device and a cooling device for the medium.

~~45~~. 49. (Currently Amended) The printhead of claim ~~44~~ 48, wherein the at least one of a heating device and a cooling device cooperates with the medium chamber.

~~46~~. 50. (Currently Amended) The printhead of one of claim ~~44~~ 48, wherein the at least one of a heating device and a cooling device is surrounded by a second housing.

~~47~~. 51. (Currently Amended) The printhead of claim ~~46~~ 50, wherein a wall of the second housing is formed from a substrate.

~~48~~. 52. (Currently Amended) The printhead of claim ~~47~~ 51, wherein the second housing is thermally decoupled from the substrate.

~~49~~. 53. (Currently Amended) The printhead of claim ~~34~~ 38, wherein the medium chamber has at least one jet opening for the hot liquid medium.

~~50~~. 54. (Currently Amended) The printhead of claim ~~34~~ 38, further comprising a protective medium outlet for a protective medium that forms a protective atmosphere which prevents the oxidation of a hot liquid medium.

~~51~~. 55. (Currently Amended) The printhead of claim ~~34~~ 41, further comprising a protective medium outlet is provided on the first housing.

~~52~~. 56. (Currently Amended) The printhead of claim ~~51~~ 55, wherein the first housing has an inlet for the protective medium.

~~53~~. 57. (Currently Amended) The printhead of claim ~~52~~ 56, wherein the inlet and the outlet are arranged in the first housing such that the actuator lies at least in some areas in the flow path of the protective medium.

~~54~~. 58. (Currently Amended) The printhead of claim ~~37~~ 41, wherein at least one of thermal decoupling between the first housing and the medium chamber and heat expansion compensation of the first housing is realized through at least one slot in the first housing.

~~55~~. 59. (Currently Amended) The printhead of claim ~~54~~ 58, wherein the at least one slot serves as a protective medium outlet.

~~56~~. 60. (Currently Amended) The printhead of claim ~~54~~ 58, wherein the at least one slot forms a comb structure on an edge of the first housing.

~~57~~. 61. (Currently Amended) The printhead of claim ~~37~~ 41, further comprising a holding plate within the first housing for the actuator, the holding plate lying approximately parallel to the diaphragm, the actuator engaging through the holding plate with the thermal barrier element facing the diaphragm.

~~58~~. 62. (Currently Amended) The printhead of claim ~~57~~ 61, wherein the retaining plate is retained and guided by guide slopes on the interior of the first housing.

~~59~~. 63. (Currently Amended) The printhead of claim ~~34~~ 38, further comprising a temperature-measuring device coupled to the medium chamber for measuring the medium temperature.

~~60~~. 64. (Currently Amended) The printhead of claim ~~34~~ 38, wherein the medium comprises a metallic solder for applying the metallic solder to a soldered joint of at least one of a micromechanical and a microelectronic element.

~~61~~. 65. (Currently Amended) A printhead for jetting a hot liquid medium, comprising:
a membrane that forms a wall of a medium chamber;
an actuator in mechanical contact with the membrane comprising a piezoelement, the piezoelement being thermally decoupled from the membrane by a thermal barrier element;
the thermal barrier element being an integral component of the piezoelement with the

piezoelement having an active zone and a passive zone, the passive zone forming the thermal barrier element; and

the active zone having electrodes and the passive zone configured without electrodes.

~~62.~~ 66. (Currently Amended) The printhead of claim ~~61~~ 65, wherein a cross-section in a zone of the thermal barrier element is smaller than in a remaining area of the actuator.

~~63.~~ 67. (Currently Amended) The printhead of claim ~~61~~ 65 , wherein other walls of the medium chamber are formed by a substrate comprised of silicon.

~~64.~~ 68. (Currently Amended) The printhead of claim ~~61~~ 65, wherein the actuator is surrounded by a first housing.

~~65.~~ 69. (Currently Amended) The printhead of claim ~~64~~ 68, wherein the actuator is configured as lamella and extends between the diaphragm and a wall of the first housing which forms a support for the actuator.

~~66.~~ 70. (Currently Amended) The printhead of claim ~~64~~ 68, wherein the first housing is configured to be at least one of electrically insulating and poor heat conducting.

~~67.~~ 71. (Currently Amended) The printhead of claim ~~64~~ 68, wherein the first housing is formed from a material that has a heat expansion coefficient that is at least similar to the heat expansion coefficient of the material forming the actuator.

~~68.~~ 72. (Currently Amended) The printhead of claim ~~61~~ 65, wherein the diaphragm of the medium chamber forms a housing wall.

~~69.~~ 73. (Currently Amended) The printhead of claim ~~64~~ 68, wherein the first housing is thermally decoupled from the medium chamber.

~~70.~~ 74. (Currently Amended) The printhead of claim ~~64~~ 68, wherein the first housing has thermal expansion compensation.

~~71.~~ 75. (Currently Amended) The printhead of claim ~~61~~ 65, further comprising at least one of a heating device and a cooling device for the medium.

~~72.~~ 76. (Currently Amended) The printhead of claim ~~71~~ 75, wherein the at least one of a heating device and a cooling device cooperates with the medium chamber.

~~73.~~ 77. (Currently Amended) The printhead of one of claim ~~71~~ 75, wherein the at least one of a heating device and a cooling device is surrounded by a second housing.

~~74.~~ 78. (Currently Amended) The printhead of claim ~~73~~ 77, wherein a wall of the second housing is formed from a substrate.

~~75.~~ 79. (Currently Amended) The printhead of claim ~~74~~ 78, wherein the second housing is thermally decoupled from the substrate.

~~76.~~ 80. (Currently Amended) The printhead of claim ~~61~~ 65, wherein the medium chamber has at least one jet opening for the hot liquid medium.

~~77.~~ 81. (Currently Amended) The printhead of claim ~~61~~ 65, further comprising a protective medium outlet for a protective medium that forms a protective atmosphere which prevents the oxidation of a hot liquid medium.

~~78.~~ 82. (Currently Amended) The printhead of claim ~~64~~ 68, further comprising a protective medium outlet is provided on the first housing.

~~79.~~ 83. (Currently Amended) The printhead of claim ~~78~~ 82, wherein the first housing has an inlet for the protective medium.

~~80.~~ 84. (Currently Amended) The printhead of claim ~~79~~ 83, wherein the inlet and the outlet are arranged in the first housing such that the actuator lies at least in some areas in the flow path of the protective medium.

~~81.~~ 85. (Currently Amended) The printhead of claim ~~64~~ 68, wherein at least one of thermal decoupling between the first housing and the medium chamber and heat expansion compensation of the first housing is realized through at least one slot in the first housing.

~~82.~~ 86. (Currently Amended) The printhead of claim ~~81~~ 85, wherein the at least one slot serves as a protective medium outlet.

~~83.~~ 87. (Currently Amended) The printhead of claim ~~81~~ 85, wherein the at least one slot forms a comb structure on an edge of the first housing.

~~84.~~ 88. (Currently Amended) The printhead of claim ~~64~~ 68, further comprising a holding plate within the first housing for the actuator, the holding plate lying approximately parallel to the diaphragm, the actuator engaging through the holding plate with the thermal barrier element facing the diaphragm.

~~85.~~ 89. (Currently Amended) The printhead of claim ~~84~~ 88, wherein the retaining plate is retained and guided by guide slopes on the interior of the first housing.

~~86.~~ 90. (Currently Amended) The printhead of claim ~~61~~ 65, further comprising a temperature-measuring device coupled to the medium chamber for measuring the medium temperature.

~~87.~~ 91. (Currently Amended) The printhead of claim ~~61~~ 65, wherein the medium comprises a metallic solder for apply the metallic solder to a soldered joint of at least one of a micromechanical and a microelectronic element.

92. - 98. (Canceled)